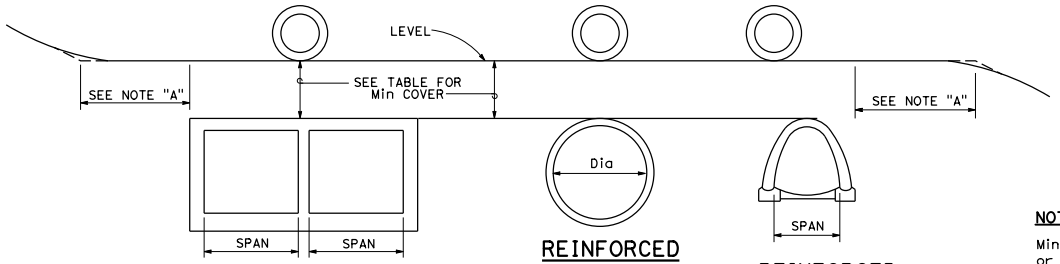
TABLE OF MINIMUM COVER AND STRUTTING REQUIREMENTS FOR CONSTRUCTION LOADS

	TYPE				18-50 k AXLE		50-75 k AXLE		75-110 k AXLE		110-150 k AXLE	
	MAXIMUM DESIGN FILL	SPAN	CELLS	Min COVER	STRUTS REQUIRED	STRUT SIZE AND SPACING	STRUTS REQUIRED	STRUT SIZE AND SPACING	STRUTS REQUIRED	STRUT SIZE AND SPACING	STRUTS REQUIRED	STRUT SIZE AND SPACING
BOX CULVERTS	10'-0" AND 20'-0"	4'-0" TO 8'-0"	SINGLE AND MULTIPLE	5'-0"	———	———	———	———	———	———	———	———
	10'-0"	10'-0" TO 14'-0"	SINGLE AND MULTIPLE	5'-0"	———	———	⅓ Points	STRUTS 6" x 6" @ 3'-6" SILLS 6" x 8"	⅓ Points	STRUTS 6" x 8" @ 3'-6" SILLS 6" x 8"	⅓ Points	STRUTS 6" x 8" @ 3'-6" SILLS 6" x 8"
	20'-0"	10'-0" TO 14'-0"	SINGLE AND MULTIPLE	5'-0"	———	———	———	———	———	———	———	———

TABLE OF MINIMUM COVER FOR CONSTRUCTION LOADS

TYPE		Dia OR SPAN	18-50 k AXLE	50-75 k AXLE	75-110 k AXLE	110-150 k AXLE
REINFORCED CONCRETE CULVERTS	PIPES	Dia 12" TO 39"	2'-0"	3'-0"	3'-0"	3'-0"
		Dia 42" TO 108"	$\frac{Dia}{1.75}$ OR 3'-0"	$\frac{Dia}{1.75}$ OR 3'-0"	$\frac{Dia}{1.75}$ OR 3'-0"	$\frac{Dia}{1.75}$ OR 3'-0"
	ARCHES	SPANS TO 14'-0"	$\frac{SPAN}{2.5}$ OR 4'-0"	$\frac{SPAN}{2.5}$ OR 4'-0"	$\frac{SPAN}{2.5}$ OR 4'-0"	$\frac{SPAN}{2.5}$ or 4'-0"
		SPANS 15'-0" TO 22'-0"	$\frac{SPAN}{3.5}$ OR 6'-0"	$\frac{SPAN}{3.5}$ OR 6'-0"	$\frac{SPAN}{3.5}$ OR 6'-0"	$\frac{SPAN}{3.5}$ OR 6'-0"
METAL CULVERTS	PIPES	Dia TO 120"	$\frac{Dia}{1.75}$ OR 4'-0"	$\frac{Dia}{1.75}$ OR 4'-0"	$\frac{Dia}{1.75}$ OR 4'-0"	$\frac{Dia}{1.75}$ OR 4'-0"
		Dia OVER 120"	$\frac{Dia}{3}$ OR 6'-0"	$\frac{Dia}{3}$ OR 6'-0"	$\frac{Dia}{3}$ OR 6'-0"	$\frac{Dia}{3}$ OR 6'-0"
	PIPE ARCHES	All Spans	$\frac{SPAN}{3}$ OR 4'-0"	$\frac{SPAN}{3}$ OR 4'-0"	$\frac{SPAN}{3}$ OR 4'-0"	$\frac{SPAN}{3}$ OR 4'-0"
	STRUCTURAL PLATE PIPE, ARCHES AND VEHICULAR UNDERCROSSINGS	ALL SPANS	$\frac{SPAN}{3}$ OR 5'-0"	$\frac{SPAN}{3}$ OR 5'-0"	$\frac{SPAN}{3}$ OR 5'-0"	$\frac{SPAN}{3}$ OR 5'-0"
PLASTIC PIPE		Dia 12" TO 60"	$\frac{Dia}{1.75}$ OR 4'-0"	$\frac{Dia}{1.75}$ OR 4'-0"	$\frac{Dia}{1.75}$ OR 4'-0"	$\frac{Dia}{1.75}$ OR 4'-0"

NOTE: Minimum cover shall be the greater value of alternatives shown. The diameter and spans shown in the table to calculate the minimum cover (Example: $\frac{Dia}{1.75}$) is the diameter or span of the facility expressed in number of feet.



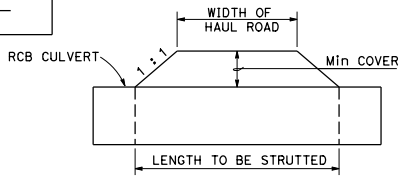
BOX CULVERTS

REINFORCED CONCRETE PIPES, PLASTIC PIPES AND METAL CULVERTS

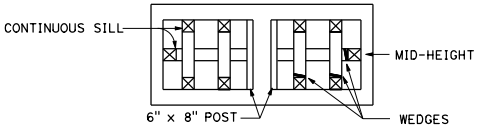
REINFORCED CONCRETE ARCH CULVERTS

NOTE "A"

Minimum distance equals 3 times the span or 3 times the diameter.



MINIMUM LENGTH OF STRUTTING



RCB STRUTTING DETAILS

NOTES:

Length of strutting to be determined by the Engineer, but shall not be less than as shown in the sketch above.

Assumed tire patterns:
- 50 k axle 2'-0" x 1'-6"
- 75 k axle 3'-0" x 2'-0"
- 110 k axle 3'-0" x 2.5'
- 150 k axle 3'-0" x 3'-0"

Impact = 10%

Sills to be glue-laminated or solid timber.

For strutting requirements of Structural Steel Plate Vehicular Undercrossing, Structural Steel Plate Arches and Structural Steel Plate Pipes during construction, see Standard Plan D88A.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

Carl M. Duan
No. C59976
Exp. 6-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION LOADS ON CULVERTS

NO SCALE

D88

2015 STANDARD PLAN D88

9-22-15